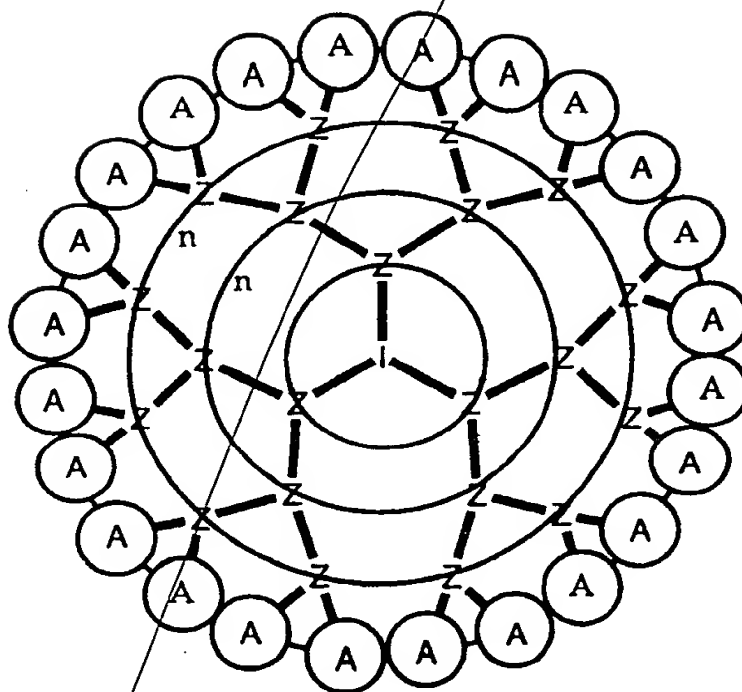


CLAIMS:

- Sub 1
C12
1. A method of prophylactic or therapeutic inhibition of a toxic material or substance in a human or non-human animal patient, which comprises administration to the patient of an effective amount of a dendrimer having a plurality of terminal groups wherein at least one of said terminal groups has an anionic- or cationic-containing moiety bonded or linked thereto.
2. A method according to claim 1, wherein said compound is a dendrimer which comprises a polyvalent core covalently bonded to at least two dendritic branches, and extends through at least two generations.
3. A method according to claim 2 wherein said dendrimer is a polyamidoamine dendrimer based on an ammonia core.
4. A method according to claim 2 wherein said dendrimer is a polyamidoamine dendrimer based on an ethylene diamine core.
5. A method according to claim 2 wherein said dendrimer is a polylysine dendrimer based on a benzhydrylamine or other suitable core.
6. A method according to claim 2 wherein said dendrimer is a poly(propyleneimine) dendrimer.
- Sub 3
C13
7. A method according to claim 2 wherein said compound is a polyionic dendrimer of the general formula I:

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wherein:

I is an initiator core;

Z is an interior branching unit;

n is an integer which represents the number of generations of the dendrimer;
and

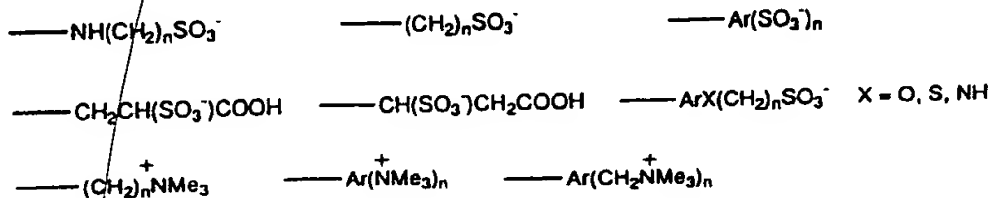
A is an anionic- or cationic containing moiety which may be linked to interior branching unit Z through an optional linking group X.

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A1
8. A method according to any of claims 1 to 7 wherein in said compound said anionic- or cationic-containing moiety or moieties are bonded to amine, sulfhydryl, hydroxy or other reactive terminal groups of the dendrimer by amide or thiourea linkages.
 9. A method according to any of claims 1 to 8, wherein in said compound said anionic- or cationic-containing moieties are selected from the group consisting of sulfonic acid-containing moieties, carboxylic acid-containing moieties (including

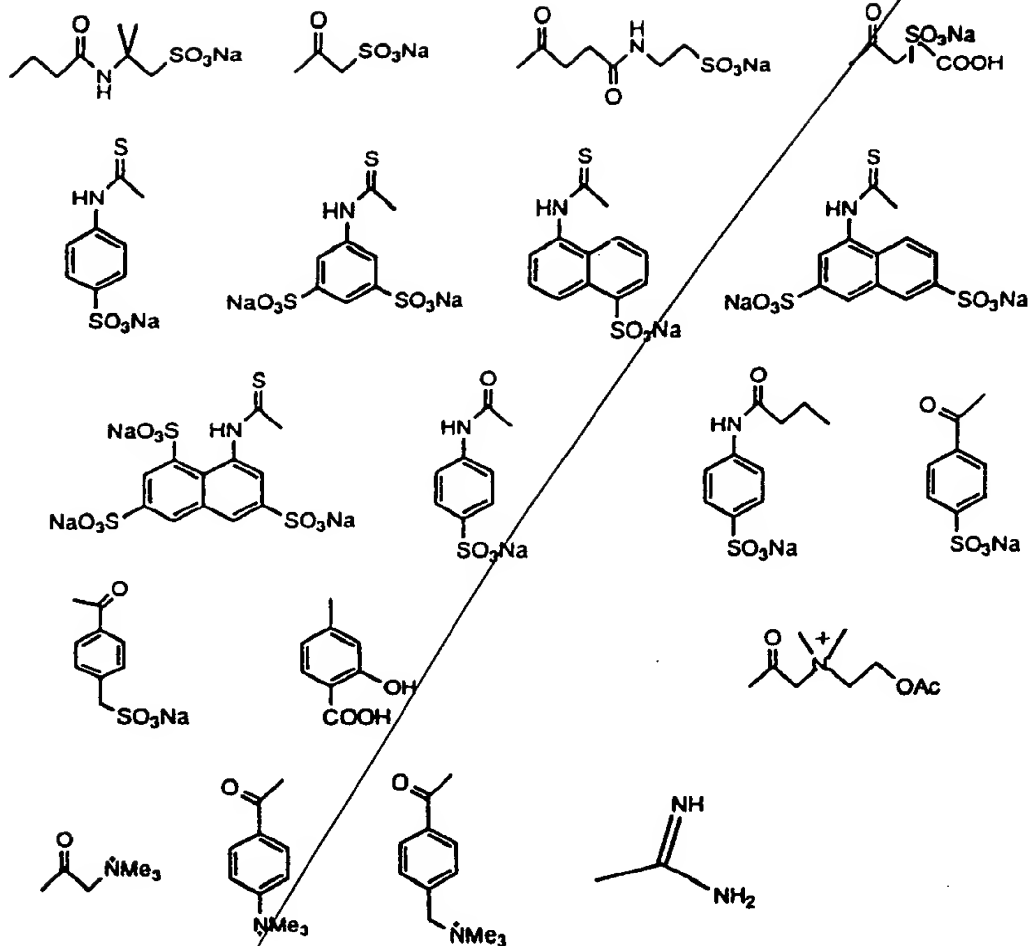
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neuraminic and sialic acid-containing moieties and modified neuraminic and sialic acid-containing moieties), boronic acid-containing moieties, phosphoric and phosphonic acid-containing moieties (including esterified phosphoric and phosphonic acid-containing moieties), primary, secondary, tertiary or quaternary amino-containing moieties, pyridinium-containing moieties, guanidinium-containing moieties, amidinium-containing moieties, phenol-containing moieties, heterocycles possessing acidic or basic hydrogens, and zwitterionic-containing moieties.

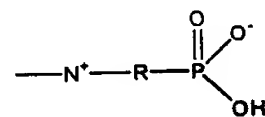
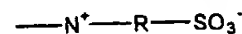
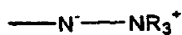
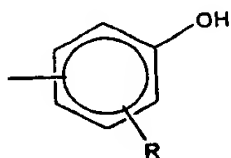
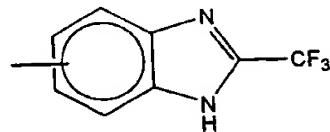
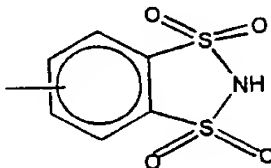
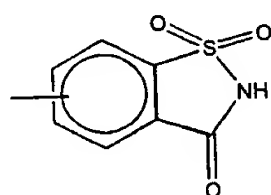
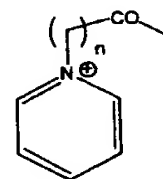
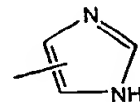
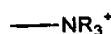
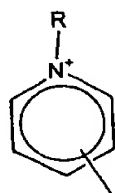
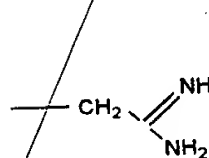
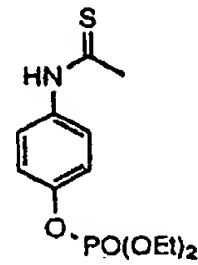
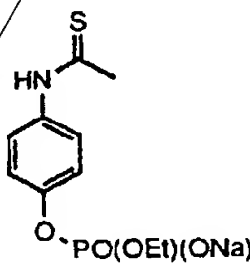
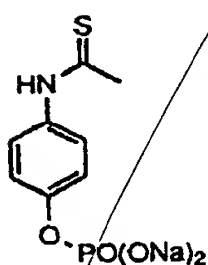
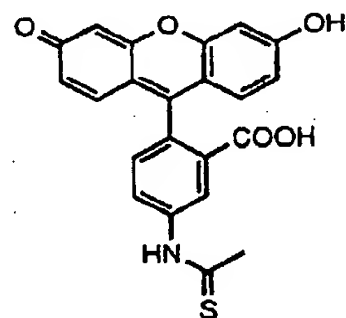
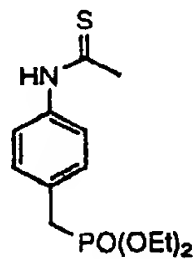
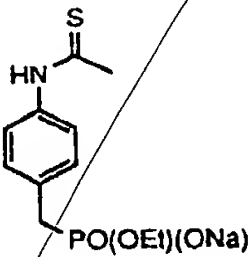
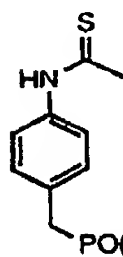
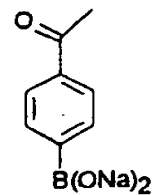
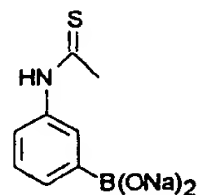
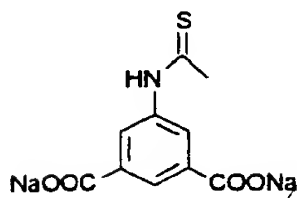
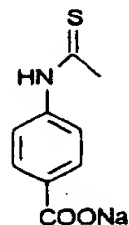
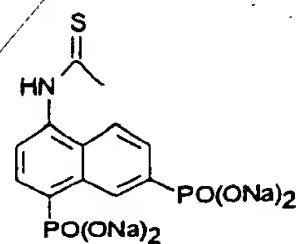
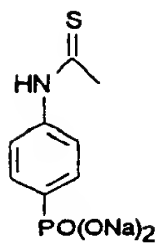
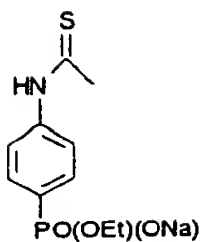
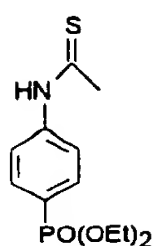
10. A method according to any of claims 1 to 9 wherein in said compound the moiety or moieties which are bonded to amino or other reactive terminal groups of the dendrimer are selected from the following groups, in which n is zero or a positive integer:



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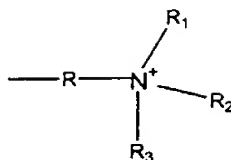
 ~~$\text{ArXP(=O)(OR}^1\text{)(NR}^2\text{R}^3\text{)}$ X=O, CH₂, CHF, CF₂ R¹=alkyl, aryl, H, Na R², R³=alkyl, aryl~~
$$\text{---Ar[P(=O)(OR)}_2\text{]}_n \quad \text{R=alkyl, aryl, H, Na} \quad n=1-3$$
$$\text{---Ar[B(OH)}_2\text{]}_n \quad n=1-3 \qquad \text{---Ar[COOH]}_n \quad n=1-3$$

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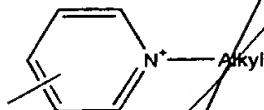


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R = alkyl or arylalkyl; R₁, R₂, R₃ (which may be same or different) = alkyl or arylalkyl



11. A method according to any one of claims 1 to 10, wherein said compound is selected from the group consisting of:
1. alkylsulfonic acid terminated dendrimers;
 2. sulfoacetamide terminated dendrimers;
 3. sulfosuccinamic acid terminated dendrimers;
 4. N-(2-sulfoethyl) succinamide terminated dendrimers;
 5. 4-sulfophenylthiourea terminated dendrimers;
 6. 3,6-di-sulfonaphthylthiourea terminated dendrimers;
 7. 4-sulfonaphthylthiourea terminated dendrimers;
 8. 3,5-di-sulfophenylthiourea terminated dendrimers;
 9. 3,6,8-tri-sulfonaphthylthiourea terminated dendrimers;
 10. 4-(sulfomethyl) benzamide terminated dendrimers;
 11. 4-sulfobenzamide terminated dendrimers;
 12. N-(4-sulfophenyl) propanamide terminated dendrimers;
 13. 4-sulfophenylurea terminated dendrimers;
 14. N,N,N-tri-methylglycinamide terminated dendrimers;
 15. 4-trimethylammonium benzamide terminated dendrimers;
 16. 4-(trimethylammoniummethyl)benzamide terminated dendrimers;
 17. N-(2-acetoxyethyl)-N,N-(dimethylammonium)methyl-carboxamide terminated dendrimers;
 18. guanidino terminated dendrimers;

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19. 4-([1,4,8,11-tetraazacyclotetradecane]methyl)benzamide terminated dendrimers;
20. 4-carboxy-3-hydroxy-benzylamine terminated dendrimers;
21. 4-carboxyphenylamide terminated dendrimers;
22. 3,5-dicarboxyphenylamide terminated dendrimers;
23. 4-phosphonooxyphenylthiourea terminated dendrimers;
24. 4-(phosphonomethyl)phenylthiourea terminated dendrimers;
25. ethyl-4-(phosphonomethyl)phenylthiourea terminated dendrimers;
26. (8-octanamido)-5-acetamido-3,5-dideoxy-2-thio-D-glycero- α -D-galacto-2-nonulopyranosidoic acid terminated dendrimers;
27. (11-undecanamido)-5-acetamido-3,5-dideoxy-2-thio-D-glycero- α -D-galacto-2-nonulopyranosidoic acid terminated dendrimers;
28. (acetamido)-5-acetamido-3,5-dideoxy-2-thio-D-glycero- α -D-galacto-2-nonulopyranosidoic acid terminated dendrimers;
29. (4-butanamido)-5-acetamido-3,5-dideoxy-2-thio-D-glycero- α -D-galacto-2-nonulopyranosidoic acid terminated dendrimers;
30. (4-methylbenzamido)-5-acetamido-3,5-dideoxy-2-thio-D-glycero- α -D-galacto-2-nonulopyranosidoic acid terminated dendrimers;
31. (8-octanamido)-4-azido-5-acetamido-3,4,5-trideoxy-2-thio-D-glycero- α -D-galacto-2-nonulopyranosidoic acid terminated dendrimers;
32. (8-octanamido)-4-amino-5-acetamido-3,4,5-trideoxy-2-thio-D-glycero- α -D-galacto-2-nonulopyranosidoic acid terminated dendrimers;
33. 4-benzamidoboronic acid terminated dendrimers;
34. 3,5-dicarboxyphenylthiourea terminated dendrimers;
35. 4-phosphonooxyphenylthiourea terminated dendrimers;
36. 4-phosphonophenylthiourea terminated dendrimers;
- xxxvii. 4,6-diphosphononaphthylthiourea terminated dendrimers;
- xxxviii. fluoresceinthiourea terminated dendrimers;

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- xxxix. (phenyl-3-boronic acid)-thiourea terminated dendrimers;
xl. pyridinium dodecylcarboxamide terminated dendrimers; and
xli. saccharin terminated dendrimers.

12. A method according to any of claims 1 to 11, wherein said treatment comprises inhibition of toxins and toxic peptides of biological origin or toxins and toxic peptides released during bacterial, protozoal, fungal or viral infection.
13. A pharmaceutical or veterinary composition for prophylactic or therapeutic inhibition of a toxic material or substance in a human or non-human animal, which comprises an anionic or cationic dendrimer as defined in any of claims 1 to 11, in association with at least one pharmaceutically or veterinarily acceptable carrier or diluent.
14. Use of an anionic or cationic dendrimer as defined in any of claims 1 to 11, in, or in the manufacture of a medicament for, prophylactic or therapeutic inhibition of a toxic material or substance in a human or non-human animal.

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